

A Survey on the Level of 5 Dimensional Qualities of Life and Health Status in Subjects with Filarial Lymphedema in Puducherry

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ABSTRACT

A survey on Quality of life (QOL) was conducted and assessed in 40 filarial lymph edema patients in the clinic unit of Vector Control Research Center (VCRC), Puducherry, by administering modified, translated, and validated versions of the Euro Quality of life -5Dimensions – 3Levels (EQ-5D-3L) health survey scale and the EQ-Visual Analogue Scale (EQ-VAS). The EQ-VAS assesses the current rating general health status. The EQ-5D-3L measures quality of health on 5 dimensions covering mobility, self-care, usual activities, pain and discomfort; and anxiety and depression. By EQ-5D-3L, patients experienced poorer physical functioning (mobility), more role limitations (self-care) resulting from physical health conditions, less emotional well-being (anxiety and depression), poorer social functioning, and more pain. By EQ-VAS, the overall general health status was significantly affected in subjects with filarial lymph edema. The significant difference in the QOL as perceived by filarial lymph edema patients reiterates the importance of morbidity control in patients affected by this disease.

KEYWORDS: *Filarial, Lymph edema, Anxiety and Depression, Social Functioning, Mobility, Self-Care, Quality of Life scale*

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INTRODUCTION

Lymphatic filariasis (LF) is among the most common vector-borne diseases in tropical regions. Above a billion people are at risk and over 120 million people are infected with parasites in more than 80 countries in Africa, Asia, Central and South Americas, and the Pacific Islands (World Health Organization [WHO], 2000a). Of those, 44 million people are suffering from symptomatic conditions such as lymphedema and hydrocele.

Lymphatic filariasis is one of six eradicable tropical diseases worldwide (Center for Disease Control and Prevention [CDC], 1993). In 1998, WHO started the Global Programme to Eliminate Lymphatic Filariasis (GPELF), an initiative aimed at complete eradication of filariasis by 2020. The program is based on two strategies: interruption of transmission and morbidity control. The interruption of transmission is designed for at risk and asymptomatic populations, and fairly achievable by several sub strategies such as mass drug distribution and diethylcarbamazine (DEC)-fortified salt intake in endemic areas.

The other approach, morbidity control, is targeted for those who live with chronic manifestations due to lymphatic filariasis. The control strategy includes adequate health education, compliance with hygiene regimens, and related efforts. However, it is still hindered by a lack of adequate

information on quality of life (QOL) issues, which could lead to more suitable, effective guidelines for morbidity control. Particularly, since filariasis is greatly associated with different socio-demographic variables (King & Freedman, 2000) and its clinical conditions are diverse by region or even within the same community (Dreyer, Figueredo-Silva, Neafie, & Addiss, 1998), providing appropriate morbidity control programs is a challenge in endemic areas including puducherry, which has one of the highest prevalence rates worldwide. One of the most common symptomatic manifestations due to LF is lymphedema. The non-fatal body disfigurement causes a huge burden of disability among infected people over decades. Currently about 15 million people are living with lymphedema worldwide. Lymphedema is also often associated with the comorbidity of hydrocele and/or acute attacks. Such conditions exacerbate daily life, but little research has been conducted on QOL among lymphedema patients.

AIM OF THE STUDY

The aim of the group project is to evaluate the level of 5 dimensional Quality of Life (mobility, self-care, usual activities, pain and discomfort; and anxiety and depression) and health status associated with the onset of Filarial lymphedema.

OBJECTIVES OF THE STUDY

Primary Objectives: To assess the Quality of Life regarding mobility, self-care, usual activities, pain and discomfort; and anxiety and depression in subjects with Filarial lymphedema.

Secondary Objectives: To assess the level of health status at present in subjects with Filarial lymphedema.

HYPOTHESIS

A Survey on the level of 5 Dimensional Quality of Life and health status in subjects with Filarial lymphedema in Puducherry.

Alternative Hypothesis: Yes, the level of 5 Dimensional Quality of Life and health status was significantly affected in subjects with filarial lymphedema.

Null Hypothesis: The level of 5 Dimensional Quality of Life and health status was not significantly affected in subjects with filarial lymphedema.

Hypothetic Question: Is there is a significant level of 5 Dimensional Quality of Life and health status affected in subjects with filarial lymphedema?

REVIEW OF LITERATURES

Filariasis is caused by eight different parasitic nematode worms. Of those, *W. bancrofti*, *B. malayi*, and *B. timori* are responsible for the infection in the lymphatic system of humans. *W. bancrofti* accounts for 90% of all infections of LF (King & Freedman, 2000).

Like other filariasis symptoms, the prevalence of lymphedema increases as infected people get older. Shriram, Murheker, Ramaiah, and Sehgel (2002) found that the increase was stable between 20 and 30 years of age, but that it became significant afterwards.

Lammie et al. (1993) found that the incidence of lymphedema was 5 – 10 times greater among females than males in Haiti. On the other hand, in India, more males experienced lymphedema than females (Shriram et al., 2002).

Recurrent bacterial infections facilitated the progression of lymphedema to elephantiasis (Dreyer et al., 1998).

In eastern India, Shriram et al. (2002) reported that 15.9 % of hydrocele patients had lymphedema, and 90 out of 565 (12.4 %) of male filariasis patients had both hydrocele and lymphedema in the southern state of Tamil Nadu (Ramaiah et al., 2000).

The low-cost psychosocial interventions such as support groups, offer significant benefits and satisfaction in alleviating the psychological burden of disease as well as improvement in QOL for people with LF in developing countries (Coreil et al., 2003).

One of the most commonly used instruments is the EuroQol Instrument, developed by the EuroQol Group, a consortium of five European countries in 1987. It is designed to examine the feasibility of jointly developing a standardized non-disease-specific instrument for describing and valuing health-related QOL (Brooks, 1996).

DESIGN & METHODOLOGY

Study Design: Survey study

Study Setting: It is done at hospital set up, clinical unit of Vector Control Research Center, puducherry.

Sampling Method: Convenient sampling.

Sampling Size: There are 40 subjects taken for this study.

Selection Criteria:

Inclusion Criteria:

Subjects between 30 and 70 years of age Subjects of both gender

Subjects with all four grade of filarial lymphedema

Subjects with both unilateral and bilateral involvement

Exclusion Criteria:

Subjects below 30 years and above 70 years of age Subjects with other chronic diseases

Subjects with other than filarial lymphedema

Study Material:

The Euro Quality of Life scale (EQ-5D), which has been shown to be effective brief screener for both the Quality of Life (mobility, self-care, usual activities, pain and discomfort; and anxiety and depression) and health status as diagnosed with the help EuroQOL – 5D user guide. The Questionnaire was provided to all the subjects, and they were asked to select one option in each domain. The finding were documented for analysis.

DATA ANALYSIS

The obtained data were tabulated in Microsoft Excel '07 spreadsheets and were reported to Graphpad prism 5 for window version 5.03 for statistical analysis.

Subjects Characteristics Analysis

Total Number of Subjects	40
EuroQOL-5D-3L Score	1.78
EQ-VAS Score	47.83

PIE CHARTS

Figure: 1 Distribution of Number of subjects by Age Interval

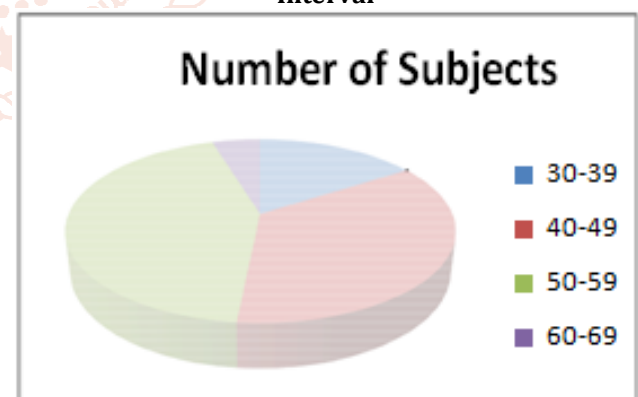
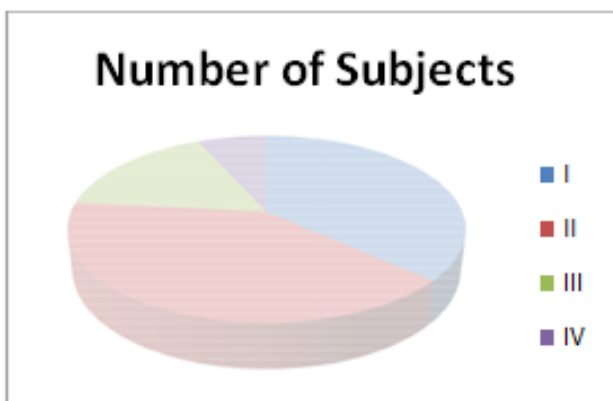


Figure: 2 Distribution of Number of subjects by Grades

**TABULATION****TABLE: 1 Frequency Distribution of Age Interval Table**

CLASS INTERVAL OF AGE	Number of Subjects (f)	Mid point(x)	xf
30-39	04	34.5	138
40-49	10	44.5	400.5
50-59	20	54.5	599.5
60-69	06	64.5	129
Total	40	198	1267

$$= \frac{\sum xf}{\sum f} = 42.23$$

Therefore, the mean age of the subjects in this group will be 42.23

TABLE: 2 on Analysis of EQ-5D-3L and EQ-VAS by Gender

Gender	Number of Subjects (%)	EQOL-5D-3L Score	EQ-VAS Score
Male	28(60)	1.74	48.05
Female	12(40)	1.85	47.50

TABLE: 3 On Analysis of EQ-5D-3L and EQ-VAS by Age interval

CLASS INTERVAL OF AGE	Number of Subjects (%)	EQOL-5D-3L Score	EQ-VAS Score
30-39	4(13.3)	1.15	73.75
40-49	10(30)	1.46	57.66
50-59	16(36.6)	1.96	42.36
60-69	10(6.6)	2.36	25.83

TABLE: 4 On Analysis of EQ-5D-3L and EQ-VAS by Lymph edema Grades

GRADES	Number of Subjects (%)	EQOL-5D-3L Score	EQ-VAS Score
I	14(36.6)	1.21	70.36
II	16(40)	1.84	45.33
III	8(16.6)	2.48	19.8
IV	2(6.6)	2.8	9

TABLE: 5 on Analysis of EQ-5D-3L and EQ-VAS by Side Involvement

Side Involvement	Number of Subjects (%)	EQOL-5D-3L Score	EQ-VAS Score
Unilateral	32	1.64	52.9
Bilateral	8	2.17	33.87

TABLE: 6 Individual Dimension Table of EURO-Quality of Life Domains

Quality of Life Domains	Individual Score
Mobility	1.76
Self-Care	1.66
Usual-Activities	1.83
Pain & Discomfort	1.80
Anxiety & Depression	1.86

BAR DIAGRAMS

Figure: 3 on Analysis of Quality of Life (EQ-5D-3L) by Gender

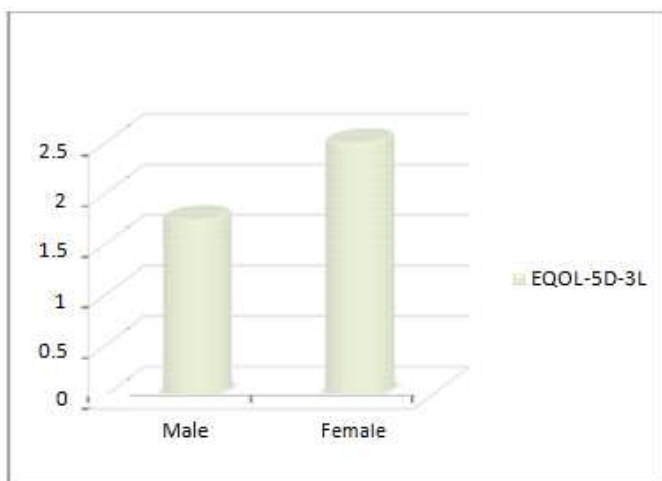


Figure: 4 On Analysis of Quality of Life (EQ-5D-3L) by Side Involvement

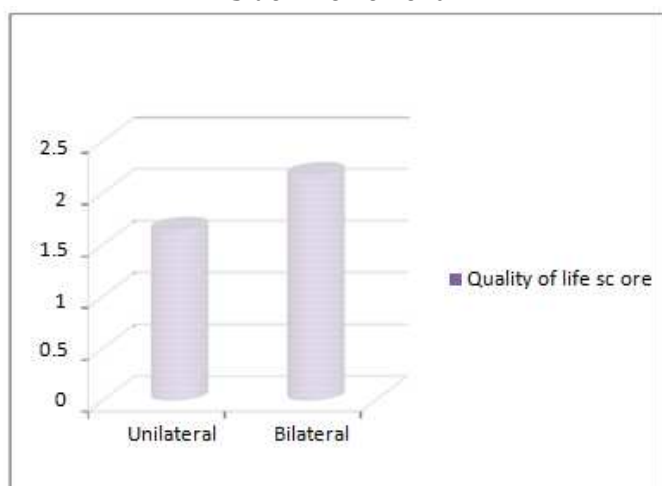


Figure: 5 On Analysis of Quality of Life (EQ-5D-3L) by Age

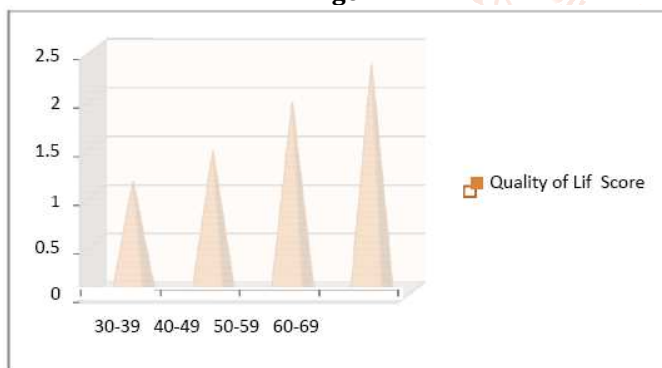
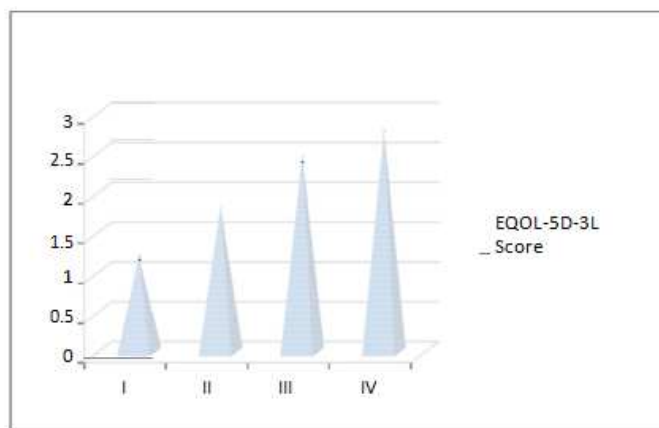


Figure: 6 On Analysis of Quality of Life (EQ-5D-3L) by Grades



LINE DIAGRAMS

Figure: 7

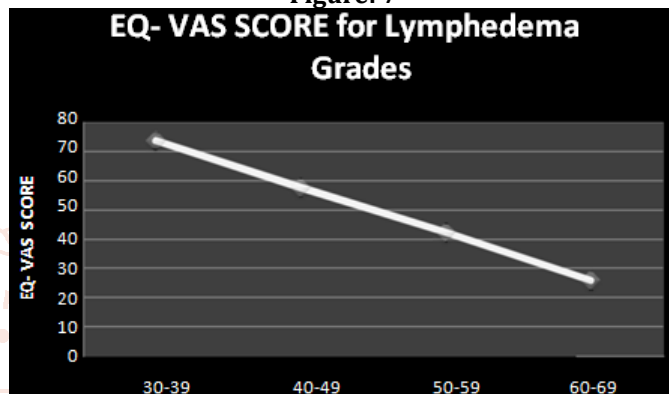
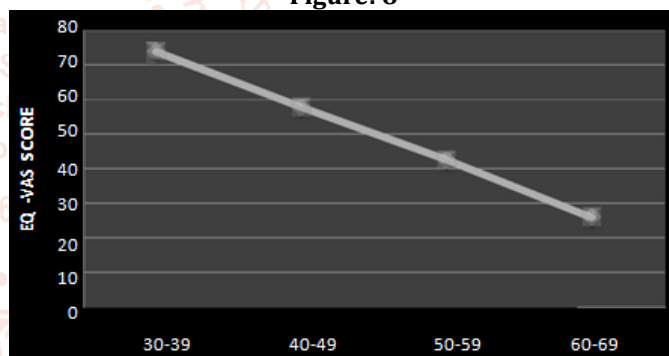


Figure: 8



RESULTS

A total of 40 subjects took part in the study, of which 60% were men. The mean age of participants was 42 years (=42.23 years). Unilateral leg swelling was the most frequently reported site of swelling (73.3%) with right side

involvement (40%) and left side involvement (33.3%). Approximately one quarter of the sample reported unilateral leg swelling (26.6%). 1.5% of patients reported that a combination of arms and legs was swollen. Approximately 6.6% of subjects had severe lymphedema, grade IV.

The mean Quality of life of the study population was 1.78 (EQ-5D = 53.6). The psychological burden of filarial lymphedema appears to be high (i.e., 5th Domain-Anxiety & Depression was 1.86), usual activity (1.83) and pain/discomfort (1.80) were second leading problem of quality of life issues.

Analyzing of quality of life (EQOL-5D) and health status (EQ-VAS) by gender, the female subjects showed higher level of quality of life issues (1.85) and also health status (47.5). The observed differences in perception and perspective between men and women arise from gender bias in disease

manifestations and consequently disabilities experienced by affected persons.

Analyzing by age, the subject in the age group between 60-69 showed higher level of quality of life issues (2.36) and also health status (25.83), followed by those in the age group between 50-59 (EQOL-5D = 1.96, EQ-VAS = 42.5).

Analyzing by the grade of lymphedema, grade III and grade IV had higher issues of Quality of life (Grade III - 2.48, Grade IV - 2.8) and the health status (Grade III - 19.8, Grade IV - 18) severely affected. Additionally, while analyzing by the side of involvement, the individuals who had bilateral involvement showed high level of impact (EQOL-5D = 2.17, EQ-VAS = 33.87) than the unilateral involvement subjects.

DISCUSSION & LIMITATION

Morbidity control of lymphatic filariasis is one of the most important public health issues in Puducherry. In order to increase QOL among lymphedema patients due to LF as well as contribute to eradicate LF worldwide, it is critical to implement appropriate control strategies in endemic areas. This group project aimed to assess QOL among affected persons by using established QOL instruments in puducherry. Particularly, attention was given to gender differences in the impact of the disease on people's daily lives. There were numerous significant findings in the results of data analysis.

Lymphatic filariasis causes disability due to its acute manifestations as well as its chronic forms. Unlike the physical disabilities that are visible, the psychosocial disabilities caused by LF tend to be unrecognized. There is growing interest in the role of mental and social health in promoting positive health and good quality of life. As only patients can assess the exact extent of disability, their perceptions are important in planning and implementing morbidity control programmes for LF.

This study demonstrates the significant physical disability and psychosocial problems as perceived by patients affected by filarial lymphoedema in puducherry. Difficulties were reported in all activities inquired about, mostly in walking which was significantly associated with lower limb oedema and also in carrying out household chores. Many patients in our study population were using toilets of the squatting type, which posed problems for many of them, with two patients not being able to use the toilet at all without help from others.

LIMITATIONS:

Uneven distribution of the sample on the basis of age, grade of lymphedema, and the side of involvement could have produced in the results being biased, this forming the major limitation of this study.

CONCLUSION

From this study, we can conclude that our results show a significant difference in the Quality Of Life and the relative health status as perceived by patients suffering from filarial lymphoedema. This finding reiterates the importance of morbidity control in patients already affected by filarial lymphoedema.

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